

INDIANA DEPARTMENT OF TRANSPORTATION  
MATERIALS AND TESTS DIVISION

VERIFYING SLUMP CONES  
ITM No. 911-99T

1.0 SCOPE

- 1.1 This test method covers the procedure for verifying the critical dimensions of the slump cone
- 1.2 The values stated in either SI metric or acceptable English units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, English units are shown in parenthesis. The values stated in each system may not be exact equivalents; therefore each system shall be used independently of the other, without combining values in any way.
- 1.3 This ITM may involve hazardous materials, operations, and equipment. This ITM does not purport to address all of the safety problems associated with the ITMs use. The ITM user's responsibility is to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2.0 REFERENCED DOCUMENTS

- 2.1 AASHTO Standards  
T 119 Slump of Hydraulic Cement Concrete

3.0 SIGNIFICANCE AND USE

- 3.1 This ITM is used by laboratory personnel to verify the critical dimensions of slump cones used in AASHTO T 119.

4.0 APPARATUS

- 4.1 Calipers, readable to 0.01 (.0004 in.) mm and at least 305 mm (12 in.) in length.
- 4.2 Ninety degree square, with one edge longer than the height of the slump cone.
- 4.3 Ruler, readable to 1 mm (.04 in.) and longer than the height of the slump cone.
- 4.4 Straight edge, at least 305 mm (12 in.) in length.

5.0 PROCEDURE

- 5.1 Visually inspect the slump cone for roundness of openings, overall condition of handles and footpegs, and general cleanliness.

- 5.2 Measure the inside diameter of the base and top of the slump cone using the calipers. Take two readings to the nearest 0.01 mm (.0004 in.) 90° apart from each other, and average the readings.
- 5.3 Verify the wall thickness of the slump cone using the calipers. Take two readings to the nearest 0.01 mm (.0004 in.) 90° apart from each other and average the readings.
- 5.4 Verify the height of the slump cone using the ruler. Place the slump cone on a level surface. Insert the ruler in the top opening, lower the ruler until it rests on the surface keeping the ruler vertical, and measure the height.
- 5.5 Verify that the base and top of the slump cone are parallel by placing the straightedge across the top opening. Measure the distance from the level surface to a reference point on the straightedge. Measure the distance from the level surface to the straightedge again 100 mm ( 4 in.) from the reference point.
- 5.6 Verify that the base and top openings of the slump cone are perpendicular to the cones vertical axis by using the 90° square. Place the square so that one side is flat along the level surface and the other edge is butted up against the base of the cone and parallel to the cone's axis. Using the ruler, measure the distance from the outside of the top of the cone to the square. Repeat the procedure on the other side of the slump cone.

## 6.0 TOLERANCE

- 6.1 The inside diameter of the base of the slump cone shall be 203 mm (8 in.)  $\pm$  3.2 mm (0.125 in.). The inside diameter of the top of the slump cone shall be 102 mm (4 in.)  $\pm$  3.2 mm (0.125 in.).
- 6.2 The thickness of the slump cone wall shall be a minimum of 1.14 mm (0.045 in.).
- 6.3 The height of the slump cone shall be 305 mm (12 in.)  $\pm$  3.2 mm (0.125 in.).
- 6.4 Measurements to verify that the base and top of the slump cone are parallel shall not differ by more than 2 mm (.08 in.).
- 6.5 Measurements to verify that the base and top of the slump cone are perpendicular to the cones axis shall not differ by more than 2 mm (.08 in.).

## SLUMP CONE VERIFICATION ITM 911

Slump Cone Identification: \_\_\_\_\_

GENERAL PHYSICAL CONDITION	
Are openings round?	
Are handles and pegs in good condition?	
Is slump cone clean?	

DIMENSIONS			
Inside diameter of base			Avg. =
Inside diameter of top			Avg. =
Wall thickness			Avg. =
Height of cone			
Parallel Openings:			
Reference point to flat surface			
100 mm from reference point to flat surface			
Measurement difference			
Openings Perpendicular to Axis of Cone:			
Horizontal distance from top to square			
Horizontal distance from top to square rotated 180°			
Measurement difference			

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Calipers used: \_\_\_\_\_

Verified by: \_\_\_\_\_

Date: \_\_\_\_\_

Next due date: \_\_\_\_\_